

## Resonance

Draw the possible resonance structures for following molecules or ions. Through formal charges on atoms, determine which is the most likely structure.

$\text{SO}_2$	
$\text{NO}_2^-$	
$\text{SCN}^-$	
$\text{NO}_3^-$	
$\text{HNO}_3$	

SO <sub>3</sub>	
SO <sub>4</sub> <sup>2+</sup>	
O <sub>3</sub>	

Use the concept of resonance to explain why all six C—C bonds in benzene, C<sub>6</sub>H<sub>6</sub>, are equal in length. Benzene's structure has all six carbons arranged in a ring structure. These C—C bonds are shorter than C—C single bonds, but longer than C=C double bonds. Use resonance to explain this observation.